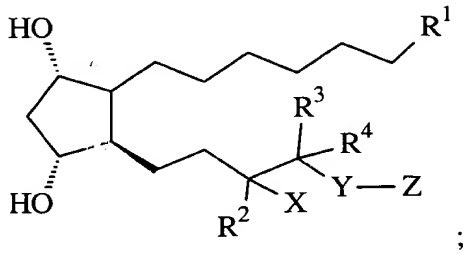
1. A topical composition for treating hair loss comprising:

A) an active ingredient selected from the group consisting of a prostaglandin F analog having the structure



;

and pharmaceutically acceptable salts and hydrates of the prostaglandin F analog; biohydrolyzable amides, esters, and imides of the prostaglandin F analog; optical isomers, diastereomers, and enantiomers of the prostaglandin F analog; and combinations thereof;

wherein R^1 is selected from the group consisting of CO_2H, C(O)NHOH, CO_2R^5, CH_2OH, $S(O)_2R^5$, $C(O)NHR^5$, $C(O)NHS(O)_2R^5$, and tetrazole;

R^2 is selected from the group consisting of a hydrogen atom and a lower monovalent hydrocarbon group;

R^3 and R^4 are each independently selected from the group consisting of H, CH_3, C_2H_5, OR^{10}, SR^{10}, and OH; with the proviso that both R^3 and R^4 are not OH;

R^5 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, aromatic groups, substituted aromatic groups, carbocyclic groups, substituted carbocyclic groups, heterogeneous groups, substituted heterogeneous groups, heterocyclic groups, substituted heterocyclic groups, heteroaromatic groups, and substituted heteroaromatic groups;

X is selected from the group consisting of NR^6R^7, OR^8, SR^9, $S(O)R^9$, and $S(O)_2R^9$;

R^6, R^7, and R^8 are each independently selected from the group consisting of hydrogen atoms, acyl groups, monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, aromatic groups,

substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^9 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, heterocyclic groups, substituted heterocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^{10} is selected from the group consisting of a monovalent hydrocarbon group, a substituted monovalent hydrocarbon group, a heterogeneous group, a substituted heterogeneous group, a carbocyclic group, a substituted carbocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group; with the proviso that R^{10} has 1 to 8 member atoms;

Y is selected from the group consisting of an oxygen atom, a divalent hydrocarbon group, a sulfur-containing moiety, and a nitrogen-containing group; and

Z is selected from the group consisting of a carbocyclic group, a substituted carbocyclic group, a heterocyclic group, a substituted heterocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group; and

B) a carrier.

2. The composition of claim 1, wherein R^1 is selected from the group consisting of CO_2H, CO_2CH_3, $CO_2C_2H_5$, $CO_2C_3H_7$, $CO_2C_4H_9$, $CO_2C_3H_7O_2$, and $C(O)NHS(O)_2R^5$.

3. The composition of claim 1, wherein R^5 is selected from the group consisting of CH_3, C_2H_5, and C_3H_7.

4. The composition of claim 1, wherein R^2 is selected from the group consisting of a hydrogen atom and a methyl group.

5. The composition of claim 1, wherein R^3 and R^4 are both hydrogen atoms.

6. The composition of claim 1, wherein X is selected from the group consisting of NR^6R^7 and OR^8.

7. The composition of claim 1, wherein R^6 and R^7 are each independently selected from the group consisting of H, CH_3, and C_2H_5.

8. The composition of claim 1, wherein R^8 is selected from the group consisting of H, CH_3, C_2H_5, and C_3H_7.

9. The composition of claim 1, wherein R^9 is selected from the group consisting of CH_3, and C_2H_5.

10. The composition of claim 1, wherein Y is a divalent hydrocarbon group having the formula $(CH_2)_n$, wherein n is 1.

11. The composition of claim 1, wherein Y is selected from the group consisting of a sulfur atom, an oxygen atom, S(O), and $S(O)_2$.

12. The composition of claim 1, wherein Y is a nitrogen-containing group having the formula NR^{11}; wherein R^{11} is selected from the group consisting of a hydrogen atom, an acyl group, a monovalent hydrocarbon group, a substituted monovalent hydrocarbon group, a heterogeneous group, a substituted heterogeneous group, a carbocyclic group, a substituted carbocyclic group, a heterocyclic group, a substituted heterocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group.

13. The composition of claim 1, wherein Z is selected from the group consisting of a monocyclic carbocyclic group, a substituted monocyclic carbocyclic group, a monocyclic heterocyclic group, a substituted monocyclic heterocyclic group, a monocyclic aromatic group, a substituted monocyclic aromatic group, a

monocyclic heteroaromatic group, and a substituted monocyclic heteroaromatic group.

14. The composition of claim 1, wherein component A) is added in an amount of

$$IC_{50} \times 10^{-2} \geq \%\text{ of component A)} \geq IC_{50} \times 10^{-3},$$

where IC_{50} of component A) is expressed in nanomolar units.

Sub A2

15. The composition of claim 1, wherein component C) is added to the composition in an amount of 1 to 20%, and a sufficient amount of component B) is added such that the amounts of components A), B), and C) combined equal 100%.

16. The composition of claim 1, wherein component B) comprises an ingredient selected from the group consisting of water, alcohols, aloe vera gel, allantoin, glycerin, vitamin A and E oils, mineral oil, propylene glycol, dimethyl isosorbide, polypropylene glycol-2 myristyl propionate, q) emollients, r) propellants, s) solvents, t) humectants, u) thickeners, v) powders, w) fragrances, and combinations thereof.

17. The composition of claim 16, wherein ingredient q) is selected from the group consisting of stearyl alcohol, glyceryl monoricinoleate, glyceryl monostearate, propane-1,2-diol, butane-1,3-diol, mink oil, cetyl alcohol, isopropyl isostearate, stearic acid, isobutyl palmitate, isocetyl stearate, oleyl alcohol, isopropyl laurate, hexyl laurate, decyl oleate, octadecan-2-ol, isocetyl alcohol, cetyl palmitate, di-n-butyl sebacate, isopropyl myristate, isopropyl palmitate, isopropyl stearate, butyl stearate, polyethylene glycol, triethylene glycol, lanolin, sesame oil, coconut oil, arachis oil, castor oil, acetylated lanolin alcohols, petrolatum, mineral oil, butyl myristate, isostearic acid, palmitic acid, isopropyl linoleate, lauryl lactate, myristyl lactate, decyl oleate, myristyl myristate, and combinations thereof.

18. The composition of claim 16, wherein ingredient r) is selected from the group consisting of propane, butane, isobutane, dimethyl ether, carbon dioxide, nitrous oxide, and combinations thereof.

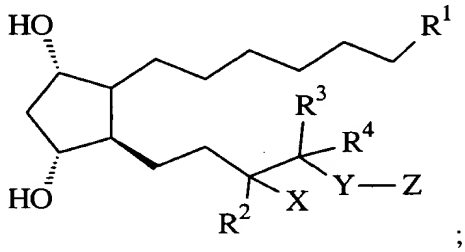
19. The composition of claim 16, wherein ingredient s) is selected from the group consisting of water, ethyl alcohol, methylene chloride, isopropanol, castor oil, ethylene glycol monoethyl ether, diethylene glycol monobutyl ether, diethylene glycol monoethyl ether, dimethyl sulfoxide, dimethyl formamide, tetrahydrofuran, and combinations thereof.

20. The composition of claim 16, wherein ingredient t) is selected from the group consisting of glycerin, sorbitol, sodium 2-pyrrolidone-5-carboxylate, soluble collagen, dibutyl phthalate, gelatin, and combinations thereof.

21. The composition of claim 16, wherein ingredient v) is selected from the group consisting of chalk, talc, fullers earth, kaolin, starch, gums, colloidal silicon dioxide, sodium polyacrylate, tetra alkyl ammonium smectites, trialkyl aryl ammonium smectites, chemically modified magnesium aluminum silicate, organically modified montmorillonite clay, hydrated aluminum silicate, fumed silica, carboxyvinyl polymer, sodium carboxymethyl cellulose, ethylene glycol monostearate, and combinations thereof.

22. A method of treating hair loss comprising administering to a mammal a composition comprising:

A) an active ingredient selected from the group consisting of a prostaglandin F analog having the structure



;

and pharmaceutically acceptable salts and hydrates of the prostaglandin F analog; biohydrolyzable amides, esters, and imides of the prostaglandin F analog; optical isomers, diastereomers, and enantiomers of the prostaglandin F analog; and combinations thereof;

wherein R^1 is selected from the group consisting of CO_2H, C(O)NHOH, CO_2R^5, CH_2OH, $S(O)_2R^5$, $C(O)NHR^5$, $C(O)NHS(O)_2R^5$, and tetrazole;

R^2 is selected from the group consisting of a hydrogen atom and a lower monovalent hydrocarbon group;

R^3 and R^4 are each independently selected from the group consisting of H, CH_3, C_2H_5, OR^{10}, SR^{10}, and OH; with the proviso that both R^3 and R^4 are not OH;

R^5 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, aromatic groups, substituted aromatic groups, carbocyclic groups, substituted carbocyclic groups, heterogeneous groups, substituted heterogeneous groups, heterocyclic groups, substituted heterocyclic groups, heteroaromatic groups, and substituted heteroaromatic groups;

X is selected from the group consisting of NR^6R^7, OR^8, SR^9, $S(O)R^9$, and $S(O)_2R^9$;

R^6, R^7, and R^8 are each independently selected from the group consisting of hydrogen atoms, acyl groups, monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^9 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, heterocyclic groups, substituted heterocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^{10} is selected from the group consisting of a monovalent hydrocarbon group, a substituted monovalent hydrocarbon group, a heterogeneous group, a substituted heterogeneous group, a carbocyclic group, a substituted carbocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and

a substituted heteroaromatic group; with the proviso that R^{10} has 1 to 8 member atoms;

Y is selected from the group consisting of an oxygen atom, a divalent hydrocarbon group, a sulfur-containing moiety, and a nitrogen-containing group; and

Z is selected from the group consisting of a carbocyclic group, a substituted carbocyclic group, a heterocyclic group, a substituted heterocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group.

23. The method of claim 22, wherein R^1 is selected from the group consisting of CO_2H, CO_2CH_3, $CO_2C_2H_5$, $CO_2C_3H_7$, $CO_2C_4H_9$, $CO_2C_3H_7O_2$, and $C(O)NHS(O)_2R^5$.

24. The method of claim 22, wherein R^5 is selected from the group consisting of CH_3, C_2H_5, and C_3H_7.

25. The method of claim 22, wherein R^2 is selected from the group consisting of a hydrogen atom and a methyl group.

26. The method of claim 22, wherein R^3 and R^4 are both hydrogen atoms.

27. The method of claim 22, wherein X is selected from the group consisting of NR^6R^7 and OR^8.

28. The method of claim 22, wherein R^6 and R^7 are each independently selected from the group consisting of H, CH_3, and C_2H_5.

29. The method of claim 22, wherein R^8 is selected from the group consisting of H, CH_3, C_2H_5, and C_3H_7.

30. The method of claim 22, wherein R^9 is selected from the group consisting of CH_3, and C_2H_5.

31. The method of claim 22, wherein Y is a divalent hydrocarbon group having the formula $(CH_2)_n$, wherein n is 1.

32. The method of claim 22, wherein Y is selected from the group consisting of a sulfur atom, an oxygen atom, S(O), and $S(O)_2$.

33. The method of claim 22, wherein Y is a nitrogen-containing group having the formula NR^{11}; wherein R^{11} is selected from the group consisting of a hydrogen atom, an acyl group, a monovalent hydrocarbon group, a substituted monovalent hydrocarbon group, a heterogeneous group, a substituted heterogeneous group, a carbocyclic group, a substituted carbocyclic group, a heterocyclic group, a substituted heterocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group.

34. The method of claim 22, wherein Z is selected from the group consisting of a monocyclic carbocyclic group, a substituted monocyclic carbocyclic group, a monocyclic heterocyclic group, a substituted monocyclic heterocyclic group, a monocyclic aromatic group, a substituted monocyclic aromatic group, a monocyclic heteroaromatic group, and a substituted monocyclic heteroaromatic group.

35. The method of claim 22, wherein the composition is administered by a route selected from the group consisting of systemic and topical routes.

36. The method of claim 35, wherein the composition is a topical composition in a form selected from the group consisting of solutions, oils, creams, ointments, gels, lotions, shampoos, leave-on and rinse-out hair conditioners, milks, cleansers, moisturizers, sprays, and skin patches.

37. The method of claim 35, wherein the composition is a topical composition further comprising B) a carrier comprising an ingredient selected from the group consisting of water, alcohols, aloe vera gel, allantoin, glycerin, vitamin A

and E oils, mineral oil, propylene glycol, dimethyl isosorbide, polypropylene glycol-2 myristyl propionate, q) emollients, r) propellants, s) solvents, t) humectants, u) thickeners, v) powders, w) fragrances, and combinations thereof.

38. The method of claim 35, wherein the composition further comprises C) an activity enhancer selected from the group consisting of i) a hair growth stimulant, ii) a penetration enhancer, and combinations thereof.

39. The method of claim 38, wherein component i) is selected from the group vasodilator, an antiandrogen, a cyclosporin, a cyclosporin analog, an antimicrobial, an anti-inflammatory, a thyroid hormone, a thyroid hormone derivative, and a thyroid hormone analog, a non-selective prostaglandin agonist, a non-selective prostaglandin antagonist, a retinoid, a triterpene, and combinations thereof.

40. The method of claim 35, wherein component ii) is selected from the group consisting of 2-methyl propan-2-ol, propan-2-ol, ethyl-2-hydroxypropanoate, hexan-2,5-diol, polyoxyethylene(2) ethyl ether, di(2-hydroxypropyl) ether, pentan-2,4-diol, acetone, polyoxyethylene(2) methyl ether, 2-hydroxypropionic acid, 2-hydroxyoctanoic acid, propan-1-ol, 1,4-dioxane, tetrahydrofuran, butan-1,4-diol, propylene glycol dipelargonate, polyoxypropylene 15 stearyl ether, octyl alcohol, polyoxyethylene ester of oleyl alcohol, oleyl alcohol, lauryl alcohol, dioctyl adipate, dicapryl adipate, di-isopropyl adipate, di-isopropyl sebacate, dibutyl sebacate, diethyl sebacate, dimethyl sebacate, dioctyl sebacate, dibutyl suberate, dioctyl azelate, dibenzyl sebacate, dibutyl phthalate, dibutyl azelate, ethyl myristate, dimethyl azelate, butyl myristate, dibutyl succinate, didecyl phthalate, decyl oleate, ethyl caproate, ethyl salicylate, isopropyl palmitate, ethyl laurate, 2-ethyl-hexyl pelargonate, isopropyl isostearate, butyl laurate, benzyl benzoate, butyl benzoate, hexyl laurate, ethyl caprate, ethyl caprylate, butyl stearate, benzyl salicylate, 2-hydroxypropanoic acid, 2-hydroxyoctanoic acid, dimethyl sulphoxide, N,N-dimethyl acetamide, N,N-dimethyl formamide, 2-pyrrolidone, 1-methyl-2-pyrrolidone, 5-methyl-2-pyrrolidone, 1,5-dimethyl-2-pyrrolidone, 1-ethyl-2-pyrrolidone, phosphine

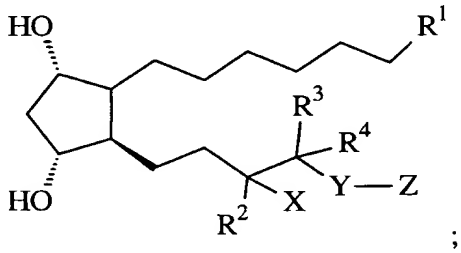
oxides, sugar esters, tetrahydrofurfural alcohol, urea, diethyl-m-toluamide, 1-dodecylazacycloheptan-2-one, and combinations thereof.

41. The method of claim 35, wherein the composition is a topical composition locally administered on the skin once per day.

42. The method of claim 41, wherein the composition is administered once per day for 6 to 12 weeks.

43. A mascara composition comprising:

A) an active ingredient selected from the group consisting of a prostaglandin F analog having the structure



;

and pharmaceutically acceptable salts and hydrates of the prostaglandin F analog; biohydrolyzable amides, esters, and imides of the prostaglandin F analog; optical isomers, diastereomers, and enantiomers of the prostaglandin F analog; and combinations thereof;

wherein R^1 is selected from the group consisting of CO_2H, C(O)NHOH, CO_2R^5, CH_2OH, $S(O)_2R^5$, $C(O)NHR^5$, $C(O)NHS(O)_2R^5$, and tetrazole;

R^2 is selected from the group consisting of a hydrogen atom and a lower monovalent hydrocarbon group;

R^3 and R^4 are each independently selected from the group consisting of H, CH_3, C_2H_5, OR^{10}, SR^{10}, and OH; with the proviso that both R^3 and R^4 are not OH;

R^5 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, aromatic groups, substituted aromatic groups, carbocyclic groups, substituted carbocyclic groups, heterogeneous groups,

substituted heterogeneous groups, heterocyclic groups, substituted heterocyclic groups, heteroaromatic groups, and substituted heteroaromatic groups;

X is selected from the group consisting of NR^6R^7, OR^8, SR^9, $S(O)R^9$, and $S(O)_2R^9$;

R^6, R^7, and R^8 are each independently selected from the group consisting of hydrogen atoms, acyl groups, monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^9 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, heterocyclic groups, substituted heterocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^{10} is selected from the group consisting of a monovalent hydrocarbon group, a substituted monovalent hydrocarbon group, a heterogeneous group, a substituted heterogeneous group, a carbocyclic group, a substituted carbocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group; with the proviso that R^{10} has 1 to 8 member atoms;

Y is selected from the group consisting of an oxygen atom, a divalent hydrocarbon group, a sulfur-containing moiety, and a nitrogen-containing group; and

Z is selected from the group consisting of a carbocyclic group, a substituted carbocyclic group, a heterocyclic group, a substituted heterocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group,

dd) a water-insoluble material,

ee) a water-soluble, film-forming polymer,

ff) a wax;

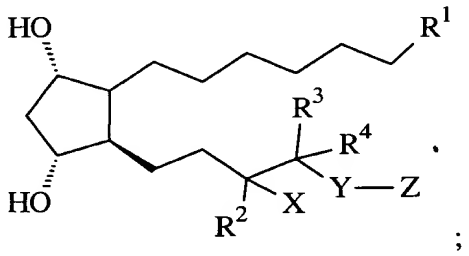
o) a surfactant;

gg) pigment; and

s) a solvent.

44. A method for darkening and thickening hair comprising applying to growing hair and skin a composition comprising:

A) an active ingredient selected from the group consisting of a prostaglandin F analog having the structure



;

and pharmaceutically acceptable salts and hydrates of the prostaglandin F analog; biohydrolyzable amides, esters, and imides of the prostaglandin F analog; optical isomers, diastereomers, and enantiomers of the prostaglandin F analog; and combinations thereof;

wherein R^1 is selected from the group consisting of CO_2H, C(O)NHOH, CO_2R^5, CH_2OH, $S(O)_2R^5$, $C(O)NHR^5$, $C(O)NHS(O)_2R^5$, and tetrazole;

R^2 is selected from the group consisting of a hydrogen atom and a lower monovalent hydrocarbon group;

R^3 and R^4 are each independently selected from the group consisting of H, CH_3, C_2H_5, OR^{10}, SR^{10}, and OH; with the proviso that both R^3 and R^4 are not OH;

R^5 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, aromatic groups, substituted aromatic groups, carbocyclic groups, substituted carbocyclic groups, heterogeneous groups, substituted heterogeneous groups, heterocyclic groups, substituted heterocyclic groups, heteroaromatic groups, and substituted heteroaromatic groups;

X is selected from the group consisting of NR^6R^7, OR^8, SR^9, $S(O)R^9$, and $S(O)_2R^9$;

R^6, R^7, and R^8 are each independently selected from the group consisting of hydrogen atoms, acyl groups, monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous

groups, carbocyclic groups, substituted carbocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^9 is selected from the group consisting of monovalent hydrocarbon groups, substituted monovalent hydrocarbon groups, heterogeneous groups, substituted heterogeneous groups, carbocyclic groups, substituted carbocyclic groups, heterocyclic groups, substituted heterocyclic groups, aromatic groups, substituted aromatic groups, heteroaromatic groups, and substituted heteroaromatic groups;

R^{10} is selected from the group consisting of a monovalent hydrocarbon group, a substituted monovalent hydrocarbon group, a heterogeneous group, a substituted heterogeneous group, a carbocyclic group, a substituted carbocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group; with the proviso that R^{10} has 1 to 8 member atoms;

Y is selected from the group consisting of an oxygen atom, a divalent hydrocarbon group, a sulfur-containing moiety, and a nitrogen-containing group; and

Z is selected from the group consisting of a carbocyclic group, a substituted carbocyclic group, a heterocyclic group, a substituted heterocyclic group, an aromatic group, a substituted aromatic group, a heteroaromatic group, and a substituted heteroaromatic group; and

B) a carrier.